Drinking Water Surveillance Program

GRIMSBY WATER TREATMENT PLANT

Annual Report 1989

Environment
Environnement
Ontario

ISSN 0840-5174

GRIMSBY
WATER TREATMENT PLANT

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1989

Cette publication technique n'est disponible qu'en anglais.

January 1991

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

GRIMSBY WATER TREATMENT PLANT
1989 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The Grimsby Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Powdered activated carbon is added when necessary in the summer months to control taste and odour. This plant has a design capacity of 19 x 1000 m^3/day and serves a population of approximately 15,000.

Water samples of the raw and treated water from the plant and one site in the distribution system were taken on a monthly basis and analyzed for the presence of approximately 180 parameters. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polyaromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analyzed in June and November only.

A summary of results is shown in Table A.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below applicable health related ODWOs.

Samples were analyzed monthly for the presence of approximately 110 Organics. Levels did not exceed health related guidelines.

During 1989, the DWSP sampling results indicated that the Grimsby Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE A

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP

SUMMARY TABLE BY SCAN

	SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	SITE 1 TESTS	SITE 1 POSITIVE	SITE 1 %POSITIVE
	BACTERIOLOGICAL	29	25	86	33	5	15	36	8	22
	CHEMISTRY (FLD)	34	33	97	68	67	98	110	94	85
	CHEMISTRY (LAB)	252	216	85	251	181	72	443	363	81
	METALS	288	180	62	288	148	51	564	327	57
	CHLOROAROMATICS	168	0	0	154	0	0	154	0	0
	CHLOROPHENOLS	6	0	0	6	0	0	.	.	.
	PAH	191	0	0	191	0	0	.	.	.
	PESTICIDES & PCB	408	0	0	387	0	0	309	0	0
	PHENOLICS	11	8	72	12	8	66	.	.	.
	SPECIFIC PESTICIDES	39	0	0	38	0	0	11	0	0
	VOLATILES	348	0	0	319	44	13	348	48	13
TOTAL		1774	462		1747	453	.	1975	840	

NO KNOWN HEALTH-RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

GRIMSBY WATER TREATMENT PLANT
1989 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The DWSP was initiated in the Grimsby distribution system in February, 1987. Sampling, at the water treatment plant began in April, 1987. Annual reports were published for 1987 and 1988 (ISSN 0840-5174).

This report contains information and results for 1989.

In order to accommodate the increasing number of plants on the DWSP and to facilitate the timely completion of the 1989 annual reports, plants with two or more years of published data will receive an abbreviated annual report. This report maintains the same general format as in previous years but does not include a comprehensive discussion of results. For more detail on the parameters analyzed and discussion of results, consult the 1987 and 1988 reports.

PLANT DESCRIPTION

The Grimsby Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Powdered activated carbon was added, when necessary, in the summer months, to control taste and odour. When demand is high in the summer months a second intake is used along with three pressure filters. This plant has a rated capacity of 19 x 1000 m^3/day and flows on day of sampling ranging from 6.8 x 1000 m^3/day to 16.2 x 1000 m^3/day. The plant serves a population of approximately 15,000.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

SAMPLING AND ANALYSIS

Plant operating personnel perform analyses on parameters for process control (Table 1).

Water at the Grimsby Water Treatment plant was sampled for the presence of approximately 180 parameters monthly in 1989. Specific Pesticides and Chlorophenols scans were sampled in June and November only.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

GRIMSBY WATER TREATMENT PLANT

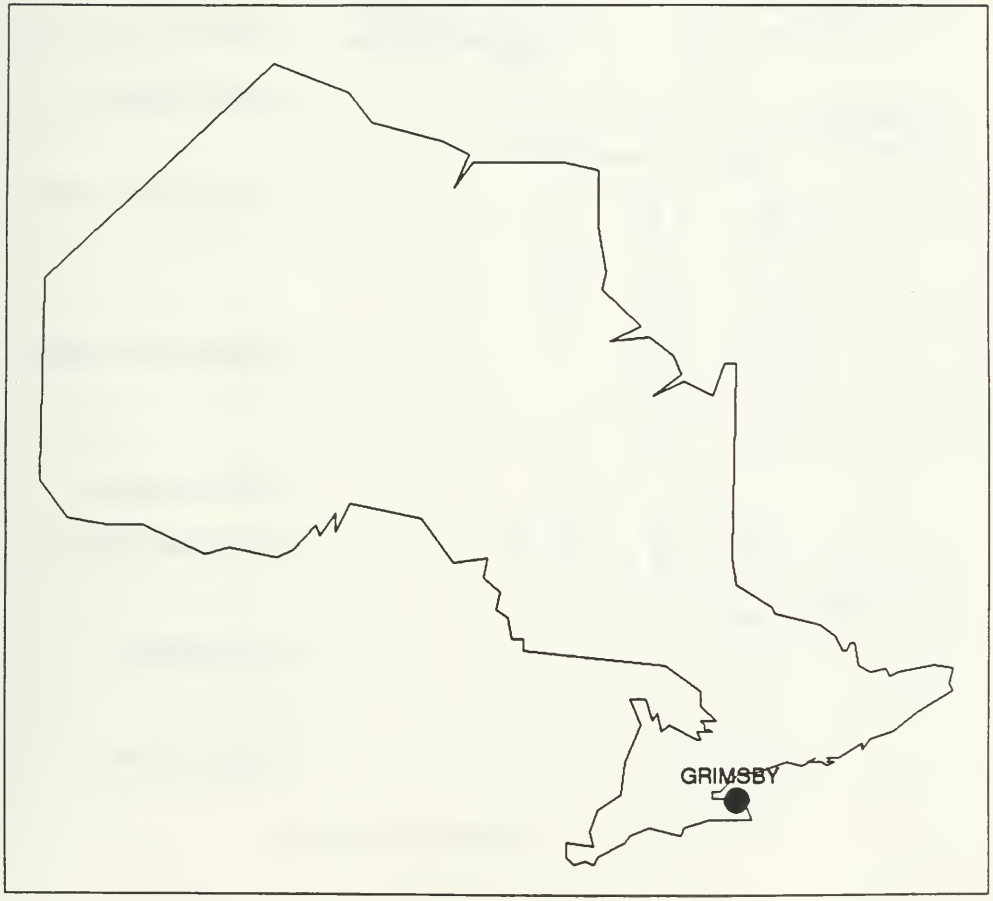
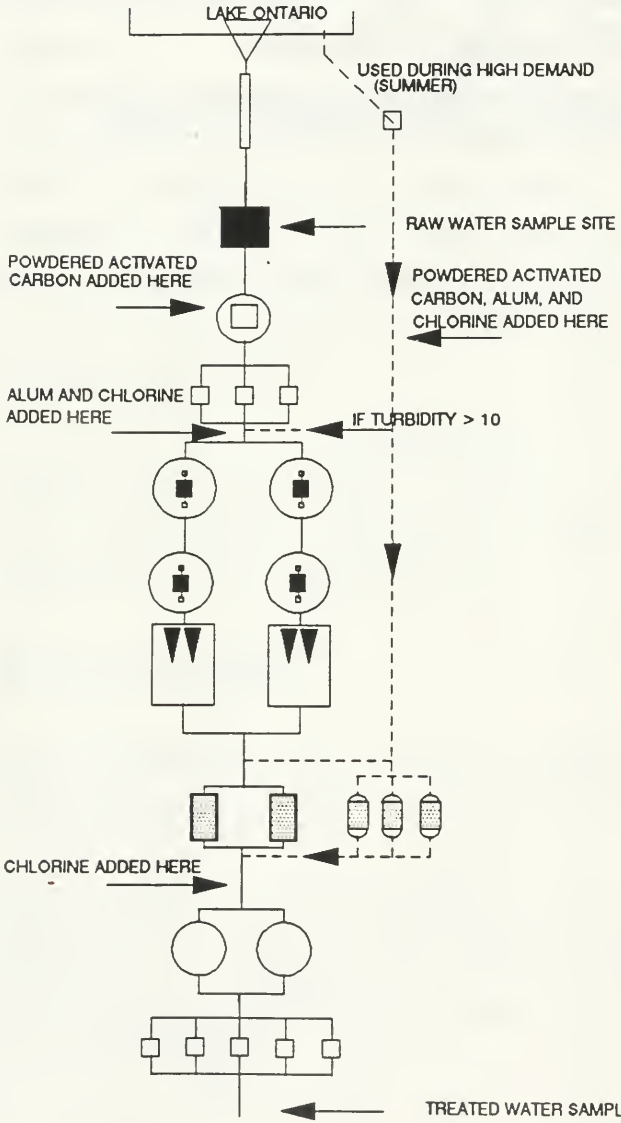


FIGURE 2

GRIMSBY WTP

SCHEMATIC DIAGRAM



CHARACTERISTICS

1 INTAKE PIPE

1 SCREEN CHAMBER

1 SURGE WELL

3 LOWLIFT PUMPS

4 FLOCCULATION TANKS

2 SEDIMENTATION TANKS

2 GRAVITY FILTERS

3 PRESSURE FILTERS

2 CLEAR WELLS

5 HIGHLIFT PUMPS

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

IN-PLANT MONITORING GRIMSBY WTP 1989

PARAMETER	LOCATION	FREQUENCY
Chlorine residual-free	Settled water	every 4 hrs
	Filtered water	every 4 hrs
	Clearwell	every 4 hrs
total	Clearwell	every 4 hrs
Temperature	Raw water	daily
Turbidity	Highlift discharge	every 4 hrs

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

GRIMSBY WATER TREATMENT PLANT

LOCATION:	ELIZABETH STREET GRIMSBY, ONTARIO FONTHILL ONTARIO L0S 1E0
SOURCE:	RAW WATER SOURCE - LAKE ONTARIO
RATED CAPACITY:	19 (1000 M3/DAY)
OPERATION:	MUNICIPAL
PLANT SUPERINTENDENT:	A. FORBES
MINISTRY REGION:	WEST CENTRAL
DISTRICT OFFICER:	MR. J. R. MAYES

MUNICIPALITY SERVED	POPULATION
GRIMSBY	15,000

Polyaromatic Hydrocarbons and Phenolics are only analyzed in the raw and treated water at the plant. As of August 1989, the analysis of Triazine pesticides was dropped from the distribution sample. Laboratory analysis was conducted at the Ministry of the Environment facilities in Rexdale, Ontario.

RESULTS

Field Chemistry measurements were recorded on the day of sampling and were entered on the DWSP database as submitted by plant personnel.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analyzed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analyzed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters. These are currently under review. When an ODWO is not available, guidelines/limits from other agencies are consulted. The Parameter Listing System (PALIS), recently published by the MOE (ISBN 0-7729-4461-X), catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Many of the compounds detected are naturally occurring or are treatment by-products.

IN THIS REPORT, DISCUSSION IS LIMITED TO THE TREATED AND DISTRIBUTED WATER AND ADDRESSES ONLY THOSE PARAMETERS WITH CONCENTRATIONS ABOVE GUIDELINE VALUES AND ORGANIC PARAMETERS WITH POSITIVE RESULTS.

Results of the treated and distributed water indicate that two health related guidelines were exceeded.

BACTERIOLOGY

Standard Plate Count

One treated water and one distribution system sample were above the ODWO aesthetic guideline of 500 counts/mL for standard plate count in August indicating some deterioration in water quality.

Inorganic and Physical Parameters

Turbidity

The turbidity of the treated water as reported by the laboratory was above the health related ODWO of 1.0 Formazin Turbidity Unit (FTU) in the December sample at 1.3 FTU. The field turbidity did not support this value. Protocol for turbidity states that measurements should be made within 48 hours. This is not always achieved except when measured in the field. The field turbidity values, therefore, are considered more reliable. Field turbidity

values of 1.5 FTU in June and 5.5 FTU in October treated water samples were reported by plant personnel.

Aluminum

The plant operational guideline of 100 µg/L as Al in water leaving the plant was exceeded in five treated water samples and four distribution samples.

Organic Parameters

Trihalomethanes

Trihalomethanes (THMs) are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs. All Total THM occurrences in the treated and distributed samples, ranging from 16.2 ug/L to 46.6 ug/L, were well below the ODWO of 350 ug/L.

CONCLUSIONS

No health related guidelines were exceeded.

Results listed in this report for 1989 are consistent with results reported for previous years.

The treated water was generally of good quality and this was maintained in the distribution system.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP SAMPLE DAY CONDITIONS FOR 1989

SAMPLE DAY CONDITIONS			TREATMENT CHEMICAL DOSAGES (MG/L)		
			PRE-CHLORINATION	COAGULATION	POST-CHLORINATION
			CHLORINE	ALUM LIQUID	CHLORINE
DATE	DELAY* TIME(HRS)	FLOW (1000M3)			
JAN 17	5.4	7.1	1.45	17.19	.11
FEB 21	4.4	8.3	.89	10.38	.10
MAR 21	5.3	6.8	1.13	27.78	.15
APR 18	4.6	7.8	1.27	10.09	.17
MAY 16	8.0	7.3	.78	15.71	.12
JUN 20	6.2	8.6	.52	11.69	.24
JUL 18	2.7	16.2	.97	16.90	.25
SEP 19	4.5	8.5	1.80	11.56	.10
OCT 17	5.5	8.5	.74	13.91	.13
NOV 21	5.5	6.7	.81	16.69	.22
DEC 19	4.5	8.4	2.72	15.33	.15

* THE DELAY TIME BETWEEN THE RAW AND TREATED WATER SAMPLING, SHOULD ESTIMATE THE RETENTION TIME.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	9	6	0	.	.	.	.	.	.
	STANDRD PLATE CNT MF	.	.	.	11	2	0	12	6	0
	TOTAL COLIFORM MF	10	10	0	11	1	0	12	1	0
	T COLIFORM BCKGRD MF	10	9	0	11	2	0	12	1	0
*TOTAL SCAN BACTERIOLOGICAL		29	25	0	33	5	0	36	8	0
*TOTAL GROUP BACTERIOLOGICAL		29	25	0	33	5	0	36	8	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	1	1	0	12	12	0	17	10	0
	FLD CHLORINE FREE	1	1	0	12	12	0	17	11	0
	FLD CHLORINE (TOTAL)	1	1	0	12	12	0	17	14	0
	FLD PH	11	11	0	11	11	0	24	24	0
	FLD TEMPERATURE	8	7	0	9	8	0	24	24	0
	FLD TURBIDITY	12	12	0	12	12	0	11	11	0
*TOTAL SCAN CHEMISTRY (FLD)		34	33	0	68	67	0	110	94	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	12	12	0	24	24	0
	CALCIUM	12	12	0	12	12	0	24	24	0
	CYANIDE	12	0	0	12	0	0	12	0	0
	CHLORIDE	12	12	0	12	12	0	24	24	0
	COLOUR	12	4	8	12	0	11	24	1	23
	CONDUCTIVITY	12	12	0	12	12	0	24	24	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHEMISTRY (LAB)	FLUORIDE	12	12	0	12	12	0	24	24	0
	HARDNESS	12	12	0	12	12	0	24	24	0
	IONCAL	12	12	0	12	12	0	24	24	0
	LANGELIERS INDEX	12	12	0	11	11	0	23	23	0
	MAGNESIUM	12	12	0	12	12	0	24	24	0
	SODIUM	12	12	0	12	12	0	24	24	0
	AMMONIUM TOTAL	12	9	0	12	1	5	24	6	8
	NITRITE	12	10	2	12	2	8	24	1	22
	TOTAL NITRATES	12	12	0	12	12	0	24	24	0
	NITROGEN TOT KJELD	12	12	0	12	12	0	24	24	0
	PH	12	12	0	12	12	0	24	24	0
	PHOSPHORUS FIL REACT	12	2	5	12	0	3	.	.	.
	PHOSPHORUS TOTAL	12	11	1	12	1	10	.	.	.
	SULPHATE	12	12	0	12	12	0	24	24	0
	TURBIDITY	12	12	0	12	10	2	24	20	4
*TOTAL SCAN CHEMISTRY (LAB)		252	216	16	251	181	39	443	363	57
METALS	SILVER	12	0	2	12	0	3	24	0	7
	ALUMINUM	12	12	0	12	12	0	24	24	0
	ARSENIC	12	6	6	12	0	11	24	3	17
	BARIUM	12	12	0	12	12	0	24	24	0
	BORON	12	12	0	12	12	0	24	24	0
	BERYLLIUM	12	0	9	12	0	6	24	0	10

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	CADMIUM	12	0	1	12	0	4	24	1	8
	COBALT	12	0	12	12	0	12	24	0	24
	CHROMIUM	12	12	0	12	9	3	24	16	6
	COPPER	12	11	1	12	3	9	24	23	1
	IRON	12	6	6	12	0	3	24	2	20
	MERCURY	12	9	3	12	10	2	12	1	11
	MANGANESE	12	12	0	12	10	2	24	24	0
	MOLYBDENUM	12	12	0	12	12	0	24	24	0
	NICKEL	12	3	9	12	3	9	24	7	17
	LEAD	12	12	0	12	2	9	24	23	1
	ANTIMONY	12	11	1	12	11	1	24	24	0
	SELENIUM	12	0	7	12	0	9	24	0	23
	STRONTIUM	12	12	0	12	12	0	24	24	0
	TITANIUM	12	12	0	12	10	2	24	20	4
	THALLIUM	12	0	5	12	0	2	24	0	6
	URANIUM	12	11	1	12	9	3	24	17	7
	VANADIUM	12	3	9	12	12	0	24	22	2
	ZINC	12	12	0	12	9	3	24	24	0
*TOTAL SCAN METALS		288	180	72	288	148	93	564	327	164
*TOTAL GROUP INORGANIC & PHYSICAL		574	429	88	607	396	132	1117	784	221
CHLOROAROMATICS	HEXACHLOROBUTADIENE	12	0	0	11	0	0	11	0	0
	123 TRICHLOROBENZENE	12	0	0	11	0	0	11	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHLOROAROMATICS	1234 T-CHLOROBENZENE	12	0	0	11	0	0	11	0	0
	1235 T-CHLOROBENZENE	12	0	0	11	0	0	11	0	0
	124 TRICHLOROBENZENE	12	0	0	11	0	0	11	0	0
	1245 T-CHLOROBENZENE	12	0	0	11	0	0	11	0	0
	135 TRICHLOROBENZENE	12	0	0	11	0	0	11	0	0
	HCB	12	0	0	11	0	0	11	0	0
	HEXACHLOROETHANE	12	0	0	11	0	0	11	0	1
	OCTACHLOROSTYRENE	12	0	0	11	0	0	11	0	0
	PENTACHLOROBENZENE	12	0	0	11	0	0	11	0	0
	236 TRICHLOROTOLUENE	12	0	0	11	0	0	11	0	0
	245 TRICHLOROTOLUENE	12	0	0	11	0	0	11	0	0
	26A TRICHLOROTOLUENE	12	0	0	11	0	0	11	0	0
*TOTAL SCAN CHLOROAROMATICS		168	0	0	154	0	0	154	0	1
CHLOROPHENOLS	234 TRICHLOROPHENOL	1	0	0	1	0	0	.	.	.
	2345 T-CHLOROPHENOL	1	0	0	1	0	0	.	.	.
	2356 T-CHLOROPHENOL	1	0	0	1	0	0	.	.	.
	245-TRICHLOROPHENOL	1	0	0	1	0	0	.	.	.
	246-TRICHLOROPHENOL	1	0	0	1	0	0	.	.	.
	PENTACHLOROPHENOL	1	0	0	1	0	0	.	.	.
*TOTAL SCAN CHLOROPHENOLS		6	0	0	6	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	12	0	0	12	0	0	.	.	.
	ANTHRACENE	12	0	0	12	0	0	.	.	.
	FLUORANTHENE	12	0	0	12	0	0	.	.	.
	PYRENE	12	0	0	12	0	0	.	.	.
	BENZO(A)ANTHRACENE	12	0	0	12	0	0	.	.	.
	CHRYSENE	12	0	0	12	0	0	.	.	.
	DIMETH. BENZ(A)ANTHR	4	0	0	4	0	0	.	.	.
	BENZO(E) PYRENE	12	0	0	12	0	0	.	.	.
	BENZO(B) FLUORANTHEN	12	0	0	12	0	0	.	.	.
	PERYLENE	12	0	0	12	0	0	.	.	.
	BENZO(K) FLUORANTHEN	12	0	0	12	0	0	.	.	.
	BENZO(A) PYRENE	7	0	0	7	0	0	.	.	.
	BENZO(G,H,I) PERYLEN	12	0	0	12	0	0	.	.	.
	DIBENZO(A,H) ANTHRAC	12	0	0	12	0	0	.	.	.
	INDENO(1,2,3-C,D) PY	12	0	0	12	0	0	.	.	.
	BENZO(B) CHRYSENE	12	0	0	12	0	0	.	.	.
	CORONENE	12	0	0	12	0	0	.	.	.
*TOTAL SCAN PAH		191	0	0	191	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	12	0	0	11	0	0	11	0	0
	ALPHA BHC	12	0	8	11	0	6	11	0	11
	BETA BHC	12	0	0	11	0	0	11	0	0
	LINDANE	12	0	1	11	0	2	11	0	4

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	ALPHA CHLORDANE	12	0	0	11	0	0	11	0	0
	GAMMA CHLORDANE	12	0	0	11	0	0	11	0	0
	DIELDRIN	12	0	0	11	0	0	11	0	0
	METHOXYCHLOR	12	0	0	11	0	0	11	0	0
	ENDOSULFAN 1	12	0	0	11	0	0	11	0	0
	ENDOSULFAN II	12	0	0	11	0	0	11	0	0
	ENDRIN	12	0	0	11	0	0	11	0	0
	ENDOSULFAN SULPHATE	12	0	0	11	0	0	11	0	0
	HEPTACHLOR EPOXIDE	12	0	0	11	0	0	11	0	0
	HEPTACHLOR	12	0	0	11	0	0	11	0	0
	MIREX	12	0	0	11	0	0	11	0	0
	OXYCHLORDANE	12	0	0	11	0	0	11	0	0
	OPDDT	12	0	0	11	0	0	11	0	0
	PCB	12	0	0	11	0	0	11	0	0
	DDD	12	0	0	11	0	0	11	0	0
	PPDDE	12	0	0	11	0	0	11	0	0
	PPDDT	12	0	0	11	0	0	11	0	0
	AMETRINE	12	0	0	12	0	0	6	0	0
	ATRAZINE	12	0	2	12	0	2	6	0	1
	ATRATONE	12	0	0	12	0	0	6	0	0
	CYANAZINE (BLADEX)	12	0	0	12	0	0	6	0	0
	D-ETHYL ATRAZINE	12	0	1	12	0	1	6	0	0
	D-ETHYL SIMAZINE	12	0	0	12	0	0	6	0	0
	PROMETONE	12	0	0	12	0	0	6	0	0
	PROPAZINE	12	0	0	12	0	0	6	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	PROMETRYNE	12	0	0	12	0	0	6	0	0
	METRIBUZIN (SENCOR)	12	0	0	12	0	0	6	0	0
	SIMAZINE	12	0	0	12	0	0	6	0	0
	ALACHLOR (LASSO)	12	0	0	12	0	0	6	0	0
	METOLACHLOR	12	0	0	12	0	0	6	0	0
*TOTAL SCAN PESTICIDES & PCB		408	0	12	387	0	11	309	0	16
PHENOLICS	PHENOLICS	11	8	2	12	8	4	.	.	.
*TOTAL SCAN PHENOLICS		11	8	2	12	8	4	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	12	0	0	11	0	0	11	0	0
	2,4,5-T	1	0	0	1	0	0	.	.	.
	2,4-D	1	0	0	1	0	0	.	.	.
	2,4-DB	1	0	0	1	0	0	.	.	.
	2,4 D PROPIONIC ACID	1	0	0	1	0	0	.	.	.
	DICAMBA	1	0	0	1	0	0	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.
	SILVEX	1	0	0	1	0	0	.	.	.
	DIAZINON	1	0	0	1	0	0	.	.	.
	DICHLOROVOS	1	0	0	1	0	0	.	.	.
	CHLORPYRIFOS	1	0	0	1	0	0	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
SPECIFIC PESTICIDES	ETHION	1	0	0	1	0	0	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.
	MALATHION	1	0	0	1	0	0	.	.	.
	MEVINPHOS	1	0	0	1	0	0	.	.	.
	METHYL PARATHION	1	0	0	1	0	0	.	.	.
	METHYLTRITHION	1	0	0	1	0	0	.	.	.
	PARATHION	1	0	0	1	0	0	.	.	.
	PHORATE	1	0	0	1	0	0	.	.	.
	RELDAN	1	0	0	1	0	0	.	.	.
	RONNEL	1	0	0	1	0	0	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.
	BENOMYL	1	0	0	1	0	0	.	.	.
	BUX	0	0	0	0	0	0	.	.	.
	CARBOFURAN	1	0	0	1	0	0	.	.	.
	CICP	1	0	0	1	0	0	.	.	.
	DIALLATE	1	0	0	1	0	0	.	.	.
	EPTAM	1	0	0	1	0	0	.	.	.
	IPC	1	0	0	1	0	0	.	.	.
	PROPOXUR	1	0	0	1	0	0	.	.	.
	CARBARYL	1	0	0	1	0	0	.	.	.
	BUTYLATE	1	0	0	1	0	0	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		39	0	0	38	0	0	11	0	0
VOLATILES	BENZENE	12	0	0	11	0	1	12	0	2

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	TOLUENE	12	0	1	11	0	5	12	0	8
	ETHYLBENZENE	12	0	2	11	0	4	12	0	3
	P-XYLENE	12	0	0	11	0	0	12	0	0
	M-XYLENE	12	0	1	11	0	2	12	0	1
	O-XYLENE	12	0	2	11	0	3	12	0	3
	STYRENE	12	0	4	11	0	8	12	0	9
	1,1 DICHLOROETHYLENE	12	0	0	11	0	0	12	0	0
	METHYLENE CHLORIDE	12	0	0	11	0	0	12	0	0
	T1,2DICHLOROETHYLENE	12	0	0	11	0	0	12	0	0
	1,1 DICHLOROETHANE	12	0	0	11	0	0	12	0	0
	CHLOROFORM	12	0	3	11	11	0	12	12	0
	111, TRICHLOROETHANE	12	0	2	11	0	2	12	0	1
	1,2 DICHLOROETHANE	12	0	0	11	0	0	12	0	0
	CARBON TETRACHLORIDE	12	0	0	11	0	0	12	0	0
	1,2 DICHLOROPROPANE	12	0	0	11	0	0	12	0	0
	TRICHLOROETHYLENE	12	0	0	11	0	0	12	0	0
	DICHLOROBROMOMETHANE	12	0	1	11	11	0	12	12	0
	112 TRICHLOROETHANE	12	0	0	11	0	0	12	0	0
	CHLORODIBROMOMETHANE	12	0	0	11	11	0	12	12	0
	T-CHLOROETHYLENE	12	0	0	11	0	0	12	0	0
	BROMOFORM	12	0	0	11	0	11	12	0	12
	1122 T-CHLOROETHANE	12	0	0	11	0	0	12	0	0
	CHLOROBENZENE	12	0	0	11	0	0	12	0	0
	1,4 DICHLOROBENZENE	12	0	0	11	0	0	12	0	0
	1,3 DICHLOROBENZENE	12	0	0	11	0	0	12	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	1,2 DICHLOROBENZENE	12	0	0	11	0	0	12	0	0
	ETHLYENE DIBROMIDE	12	0	0	11	0	0	12	0	0
	TOTL TRIHALOMETHANES	12	0	0	11	11	0	12	12	0
*TOTAL SCAN VOLATILES		348	0	16	319	44	36	348	48	39
*TOTAL GROUP ORGANIC		1171	8	30	1107	52	51	822	48	56
TOTAL		1774	462	118	1747	453	183	1975	840	277

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. Studies of long-term environmental trends and modelling may however, be adversely affected by the exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported with the code "<T". Results qualified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. The average of such data however, is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!IV	No Data: Inverted Septum
!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded

!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
USD	Unreliable: Sample Decomposition Noted
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
BACTERIOLOGICAL				
FECAL COLIFORM MF (CT/100ML)			**DET'N LIMIT = 0**	**GUIDELINE = 0 (A1)**
JAN	0 T48	.	.	.
FEB	0	.	.	.
MAR	3 T48	.	.	.
APR	0 T48	.	.	.
MAY	3	.	.	.
JUN	!LA	.	.	.
SEP	2	.	.	.
OCT	18	.	.	.
NOV	4	.	.	.
DEC	4	.	.	.
STANDRD PLATE CNT MF ( )			**DET'N LIMIT = 0**	**GUIDELINE = 500/ML (A1)**
JAN	.	0 <=>	.	14 T24
FEB	.	0 <=>	.	131 T24
MAR	.	0 <=>	.	33 T24
APR	.	0 <=>	.	3 <=>
MAY	.	0 <=>	.	8 <=>
JUN	.	0 <=>	.	0 <=>
JUL	.	.	.	8 <=>
AUG	.	2400 >	.	540
SEP	.	71	.	34
OCT	.	4 <=>	.	49
NOV	.	0 <=>	.	2 <=>
DEC	.	0 <=>	.	0 <=>
TOTAL COLIFORM MF (CT/100ML)			**DET'N LIMIT = 0**	**GUIDELINE = 5/100ML(A1)**
JAN	52 A3C	0 T48	.	0 T24
FEB	30 A3C	0 T48	.	0 T24
MAR	680 A3C	0 T48	.	0 T24
APR	8 T48	0 T48	.	0 T24
MAY	100 A3C	0	.	0
JUN	28 A3C	5	.	3
JUL	.	.	.	0
AUG	.	0	.	0
SEP	48 A3C	0	.	0
OCT	300 A3C	0	.	0
NOV	130	0	.	0
DEC	70 A3C	0	.	0
T COLIFORM BCKGRD MF (CT/100ML)			**DET'N LIMIT = 0**	**GUIDELINE = N/A**
JAN	1360 A3C	0 T48	.	0 T24
FEB	4800 >	0 T48	.	0 T24
MAR	8400 A3C	0 T48	.	0 T24
APR	72 T48	0 T48	.	0 T24
MAY	9600 >	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JUN	4400 A3C	2	.	6
JUL	.	.	.	0
AUG	.	0	.	0
SEP	9600 >	0	.	0
OCT	48000 >	0	.	0
NOV	BDL	109	.	0
DEC	1320 A3C	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
CHEMISTRY (FLD)				
FLD CHLORINE (COMB) ( )			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.	.080	.	.060
FEB	.700	.100	.	.050
MAR	.	.060	.	.060
APR	.	.090	.	.080
MAY	.	.100	.	.040
JUN	.	.060	.	.050
JUL	.	.080	.000	.000
AUG	.	.100	.000	.060
SEP	.	.070	.	.040
OCT	.	.100	.000	.050
NOV	.	.050	.000	.000
DEC	.	.090	.100	.000
FLD CHLORINE FREE ( )			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.	.430	.	.260
FEB	.100	.700	.	.140
MAR	.	.300	.	.140
APR	.	.340	.	.140
MAY	.	.360	.	.110
JUN	.	.210	.	.060
JUL	.	.400	.000	.100
AUG	.	.250	.000	.060
SEP	.	.370	.	.060
OCT	.	.390	.000	.250
NOV	.	.450	.000	.000
DEC	.	.430	.000	.100
FLD CHLORINE (TOTAL) ( )			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.	.510	.	.320
FEB	.100	.100	.	.190
MAR	.	.360	.	.210
APR	.	.430	.	.220
MAY	.	.460	.	.150
JUN	.	.270	.	.110
JUL	.	.480	.000	.100
AUG	.	.350	.000	.120
SEP	.	.440	.	.100
OCT	.	.490	.000	.320
NOV	.	.500	.100	.100
DEC	.	.520	.100	.100
FLD PH (DIMNSLESS)			DET'N LIMIT = N/A	GUIDELINE = 6.5-8.5(A4)
JAN	7.700	7.200	7.400	7.400
FEB	7.400	7.600	7.600	7.400
MAR	.	.	7.400	7.400

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	7.800	7.400	7.600	7.600
MAY	7.900	7.400	7.800	7.600
JUN	7.600	7.600	7.600	7.600
JUL	8.000	7.400	7.600	7.600
AUG	8.000	7.500	7.800	7.600
SEP	7.900	7.300	7.600	7.400
OCT	7.800	7.300	7.600	7.400
NOV	7.800	7.400	7.400	7.400
DEC	7.800	7.300	6.800	7.600
FLD TEMPERATURE ( )			DET'N LIMIT = N/A	GUIDELINE = 15 (A1)
JAN	.	.	12.000	5.000
FEB	.	.	15.000	8.000
MAR	.	.	13.000	6.000
APR	4.500	4.500	15.000	7.000
MAY	6.000	6.500	16.000	9.000
JUN	13.500	13.500	17.000	15.000
JUL	18.000	18.000	21.000	19.000
AUG	16.500	17.000	19.000	19.000
SEP	.	16.000	20.000	19.000
OCT	8.500	9.000	17.000	15.000
NOV	3.500	3.500	18.000	12.000
DEC	.000	.000	15.000	7.000
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A	GUIDELINE = 1.0 (A1)
JAN	2.100	.060	.	.090
FEB	1.400	.180	.	.200
MAR	20.000	.120	.	.200
APR	1.300	.110	.	.240
MAY	3.400	.100	.	.240
JUN	1.900	1.500	.	.150
JUL	2.000	.110	.	.160
AUG	2.000	.140	.	.220
SEP	2.300	.100	.	.100
OCT	4.800	5.500	.	.220
NOV	1.100	.070	.	.120
DEC	12.000	.700	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
CHEMISTRY (LAB)				
ALKALINITY (MG/L)			DET'N LIMIT = .200	GUIDELINE = 30-500 (A4)
JAN	103.100	91.600	93.600	93.500
FEB	102.800	95.400	95.600	94.600
MAR	104.300	88.300	86.400	87.500
APR	101.000	94.300	93.700	93.500
MAY	103.000	93.500	93.600	93.500
JUN	104.100	95.000	94.500	94.100
JUL	97.800	87.200	88.100	90.900
AUG	100.400	91.900	92.000	92.100
SEP	96.800	88.500	88.600	88.100
OCT	104.100	95.300	95.700	94.800
NOV	103.000	93.100	90.300	92.300
DEC	105.300	96.000	96.200	96.800
CALCIUM (MG/L)			DET'N LIMIT = .100	GUIDELINE = 100 (F2)
JAN	40.600	41.400	40.200	39.800
FEB	43.200	41.600	40.400	41.000
MAR	41.600	41.200	41.800	41.800
APR	42.800	43.400	42.400	42.200
MAY	41.000	41.200	41.400	41.200
JUN	42.000	41.000	40.400	40.000
JUL	37.400	38.400	37.200	37.400
AUG	39.200	41.600	40.600	41.000
SEP	37.200	36.800	37.600	35.800
OCT	41.000	41.800	41.400	41.200
NOV	40.800	40.200	42.000	39.800
DEC	43.000	42.400	41.500	41.900
CHLORIDE (MG/L)			DET'N LIMIT = .200	GUIDELINE = 250 (A3)
JAN	25.000	25.700	25.800	25.900
FEB	27.100	26.700	27.100	25.500
MAR	26.900	29.800	32.900	31.000
APR	27.600	29.600	29.200	27.000
MAY	28.100	30.300	30.400	30.000
JUN	25.500	26.700	25.900	25.900
JUL	22.900	24.100	23.500	22.900
AUG	23.200	24.500	24.500	24.400
SEP	22.600	24.200	24.000	24.000
OCT	24.200	25.400	24.600	24.500
NOV	23.200	23.900	27.100	24.200
DEC	24.800	25.800	25.400	25.300
COLOUR (HZU)			DET'N LIMIT = .5	GUIDELINE = 5.0 (A3)
JAN	1.500 <T	.500 <T	1.000 <T	1.000 <T
FEB	2.000 <T	BDL	.500 <T	1.500 <T
MAR	4.000	1.000 <T	.500 <T	2.000 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	2.500	1.000 <T	1.500 <T	1.000 <T
MAY	3.000	1.000 <T	1.500 <T	2.500
JUN	2.500	.500 <T	1.000 <T	1.000 <T
JUL	2.000 <T	.500 <T	1.000 <T	1.000 <T
AUG	2.000 <T	.500 <T	1.000 <T	1.000 <T
SEP	2.000 <T	.500 <T	.500 <T	.500 <T
OCT	2.000 <T	1.000 <T	1.500 <T	1.000 <T
NOV	2.000 <T	.500 <T	1.000 <T	.500 <T
DEC	.500 <T	.500 <T	1.000 <T	2.000 <T
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1	GUIDELINE = 400 (F2)
JAN	337	343	342	341
FEB	353	352	342	344
MAR	357	375	386	378
APR	356	367	363	350
MAY	354	363	362	360
JUN	341	344	339	336
JUL	317	322	318	318
AUG	322	327	324	321
SEP	319	320	321	316
OCT	342	346	345	341
NOV	335	339	369	338
DEC	346	355	349	350
FLUORIDE (MG/L)			DET'N LIMIT = .01	GUIDELINE = 2.400 (A1)
JAN	.140	.100	.120	.100
FEB	.140	.120	.120	.120
MAR	.140	.100	.080	.100
APR	.160	.140	.120	.140
MAY	.160	.140	.160	.120
JUN	.120	.120	.120	.080
JUL	.120	.120	.120	.120
AUG	.140	.120	.120	.120
SEP	.120	.120	.120	.120
OCT	.140	.120	.120	.120
NOV	.120	.120	.080	.100
DEC	.160	.120	.120	.140
HARDNESS (MG/L)			DET'N LIMIT = .500	GUIDELINE = 80-100 (A4)
JAN	137.000	138.000	136.000	135.000
FEB	145.000	141.000	137.000	139.000
MAR	141.000	140.000	142.000	141.000
APR	143.000	144.000	141.000	140.000
MAY	139.000	140.000	141.000	140.000
JUN	141.000	138.000	135.000	134.000
JUL	128.000	132.000	129.000	129.000
AUG	133.000	139.000	137.000	138.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
SEP	127.000	127.000	128.000	123.000
OCT	137.000	139.000	139.000	138.000
NOV	137.000	136.000	143.000	136.000
DEC	143.500	141.800	139.300	139.500
IONCAL (DMNSLESS)			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	1.462	.112	2.369	2.226
FEB	.388	.409	2.291	.681
MAR	.889	1.486	1.564	1.356
APR	6.285	6.744	9.591	1.566
MAY	1.598	1.966	1.602	1.223
JUN	1.142	2.241	2.146	2.907
JUL	1.440	.135	.922	1.765
AUG	2.432	.704	.371	1.319
SEP	2.346	2.791	1.854	3.732
OCT	1.653	1.009	1.086	.860
NOV	2.120	2.250	3.349	2.532
DEC	2.256	4.444	4.645	4.596
LANGELIERS INDEX (DMNSLESS)			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.407	-.067	-.050	.095
FEB	.381	.182	.181	.213
MAR	.550	.402	.428	.454
APR	.449	.264	.282	.260
MAY	.539	.448	.461	.439
JUN	.285	.285	.187	.201
JUL	.500	.261	.242	.398
AUG	.442	.428	.369	.364
SEP	.383	.310	.229	.266
OCT	.565	.414	.412	.406
NOV	.459	.278	.321	.330
DEC	.550	.523	.545	.452
MAGNESIUM (MG/L)			DET'N LIMIT = .050	GUIDELINE = 30 (F2)
JAN	8.600	8.600	8.700	8.600
FEB	9.100	9.000	8.700	8.900
MAR	8.900	9.000	9.100	9.000
APR	8.700	8.700	8.600	8.400
MAY	8.900	9.100	9.000	9.000
JUN	8.700	8.600	8.400	8.400
JUL	8.600	8.700	8.600	8.600
AUG	8.500	8.500	8.700	8.600
SEP	8.400	8.500	8.400	8.200
OCT	8.400	8.500	8.700	8.600
NOV	8.500	8.600	9.300	8.800
DEC	8.800	8.750	8.700	8.500

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM		
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)
JAN	13.400	13.400	13.200	13.400	
FEB	14.200	13.600	12.800	13.000	
MAR	14.600	16.000	17.200	16.200	
APR	18.400	19.600	22.400	13.700	
MAY	15.400	15.600	15.600	15.600	
JUN	13.200	13.200	13.200	12.800	
JUL	12.200	12.000	12.000	11.600	
AUG	11.600	11.400	11.600	11.600	
SEP	12.000	12.000	12.200	12.200	
OCT	13.400	13.000	12.800	12.600	
NOV	12.200	12.200	14.000	12.000	
DEC	11.300	11.500	11.200	11.200	
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)
JAN	BDL	.002 <T	.006 <T	.004 <T	
FEB	.026	.002 <T	.006 <T	.002 <T	
MAR	.024	.002 <T	.002 <T	BDL	
APR	.054	.028	.012	.010	
MAY	.032	BDL	BDL	BDL	
JUN	.036	BDL	BDL	BDL	
JUL	.030	.004 <T	.016	.002 <T	
AUG	.042	BDL	.052	.008 <T	
SEP	.016	.004 <T	.004 <T	BDL	
OCT	.012	BDL	.056	BDL	
NOV	BDL	BDL	.018	BDL	
DEC	BDL	BDL	BDL	BDL	
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)
JAN	.006	.003 <T	.003 <T	.003 <T	
FEB	.005	.001 <T	.001 <T	.001 <T	
MAR	.015	.005	.007	.004 <T	
APR	.007	.001 <T	.001 <T	.001 <T	
MAY	.010	.001 <T	.002 <T	.002 <T	
JUN	.012	.002 <T	.003 <T	.002 <T	
JUL	.009	.002 <T	.002 <T	.002 <T	
AUG	.005	BDL	BDL	.001 <T	
SEP	.005	.003 <T	.003 <T	.001 <T	
OCT	.005	.001 <T	.001 <T	.001 <T	
NOV	.001 <T	BDL	.002 <T	.001 <T	
DEC	.004 <T	.005	.004 <T	.004 <T	
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)
JAN	.405	.395	.395	.400	
FEB	.425	.415	.395	.395	
MAR	.405	.440	.480	.445	
APR	.415	.380	.370	.340	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAY	.440	.445	.440	.435
JUN	.420	.370	.320	.330
JUL	.240	.220	.215	.220
AUG	.200	.195	.290	.195
SEP	.210	.210	.175	.165
OCT	.375	.390	.555	.365
NOV	.390	.400	.635	.400
DEC	.485	.440	.430	.425
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020	GUIDELINE = N/A
JAN	.220	.150	.150	.150
FEB	.210	.170	.150	.160
MAR	.380	.190	.210	.210
APR	.300	.220	.210	.190
MAY	.360	.210	.200	.210
JUN	.330	.190	.180	.180
JUL	.250	.150	.180	.170
AUG	.330	.190	.260	.200
SEP	.280	.170	.180	.190
OCT	.240	.150	.220	.130
NOV	.200	.150	.250	.150
DEC	.210	.140	.150	.110
PH (DMNSLESS)			DET'N LIMIT = N/A	GUIDELINE = 6.5-8.5(A4)
JAN	8.230	7.800	7.820	7.970
FEB	8.180	8.030	8.040	8.070
MAR	8.360	8.290	8.320	8.340
APR	8.260	8.100	8.130	8.110
MAY	8.360	8.310	8.320	8.300
JUN	8.090	8.140	8.050	8.070
JUL	8.380	8.180	8.170	8.310
AUG	8.290	8.290	8.240	8.230
SEP	8.270	8.240	8.150	8.210
OCT	8.380	8.260	8.260	8.260
NOV	8.280	8.150	8.190	8.210
DEC	8.340	8.360	8.390	8.290
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005	GUIDELINE = N/A
JAN	.001 <T	.000 <T	.	.
FEB	BDL	BDL	.	.
MAR	.008	.000 <T	.	.
APR	.000 <T	BDL	.	.
MAY	.001 <T	BDL	.	.
JUN	BDL	BDL	.	.
JUL	BDL	BDL	.	.
AUG	.000 <T	BDL	.	.
SEP	BDL	BDL	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
OCT	.001 <T	BDL	.	.
NOV	BDL	BDL	.	.
DEC	.004	.000 <T	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002	GUIDELINE = .40 (F2)
JAN	.013	.002 <T	.	.
FEB	.010	.002 <T	.	.
MAR	.058	.002 <T	.	.
APR	.008 <T	.004 <T	.	.
MAY	.013	.002 <T	.	.
JUN	.029	.012	.	.
JUL	.011	BDL	.	.
AUG	.014	.003 <T	.	.
SEP	.013	.003 <T	.	.
OCT	.013	.002 <T	.	.
NOV	.010	.003 <T	.	.
DEC	.026	.003 <T	.	.
SULPHATE (MG/L)			DET'N LIMIT = .200	GUIDELINE = 500. (A3)
JAN	27.330	37.280	35.910	34.650
FEB	33.010	33.820	31.720	32.770
MAR	28.890	43.520	45.540	44.290
APR	29.370	36.140	35.660	32.940
MAY	29.830	38.180	37.440	36.980
JUN	28.650	34.730	34.050	33.750
JUL	25.540	34.130	32.440	31.360
AUG	27.050	33.860	32.960	32.280
SEP	26.610	32.450	33.360	31.350
OCT	28.040	35.260	35.120	34.910
NOV	28.480	36.160	46.680	36.350
DEC	28.660	38.640	36.220	35.920
TURBIDITY (FTU)			DET'N LIMIT = .02	GUIDELINE = 1.00 (A1)
JAN	3.200	.460	.680	.830
FEB	1.350	.200 <T	.250	.250 <T
MAR	45.000	.430	.710	.580
APR	.990	.290	.330	.290
MAY	4.100	.290	.240 <T	.450
JUN	2.700	.880	.410	.520
JUL	2.600	.280	.210	.300
AUG	2.900	.870	1.170	1.510
SEP	4.400	.240 <T	.200	.350
OCT	7.500	.450	.400	.220 <T
NOV	1.720	.560	.470	.150
DEC	27.000	1.300 RRV	.230 <T	.350

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
METALS				
SILVER (UG/L)			DET'N LIMIT = .020	GUIDELINE = 50. (A1)
JAN	BDL	BDL	BDL	BDL
FEB	BDL	BDL	BDL	BDL
MAR	.060 <T	.080 <T	.060 <T	.040 <T
APR	BDL	BDL	.040 <T	BDL
MAY	.030 <T	.060 <T	.060 <T	BDL
JUN	BDL	.030 <T	.030 <T	.030 <T
JUL	BDL	BDL	BDL	BDL
AUG	BDL	BDL	BDL	BDL
SEP	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL
NOV	BDL	BDL	.370 <T	BDL
DEC	BDL	BDL	BDL	BDL
ALUMINUM (UG/L)			DET'N LIMIT = .050	GUIDELINE = 100.(A4)
JAN	45.240	58.000	32.480	75.400
FEB	32.480	46.400	76.560	46.400
MAR	394.400	26.680	70.760	25.520
APR	13.920	75.400	37.120	73.080
MAY	77.720	80.040	52.200	66.120
JUN	23.000	150.000	96.000	150.000
JUL	58.910	138.000	84.700	180.000
AUG	22.000	170.000	160.000	180.000
SEP	49.000	150.000	160.000	190.000
OCT	69.000	67.000	75.000	63.000
NOV	22.000	100.000	61.000	46.000
DEC	190.000	140.000	51.000	53.000
ARSENIC (UG/L)			DET'N LIMIT = 0.050	GUIDELINE = 50.0 (A1)
JAN	1.200	.180 <T	.290 <T	.310 <T
FEB	1.000 <T	.140 <T	.120 <T	BDL
MAR	1.600	.760 <T	.890 <T	.630 <T
APR	.790 <T	.500 <T	.320 <T	.410 <T
MAY	1.500	.720 <T	.640 <T	1.100
JUN	.100 <T	BDL	BDL	BDL
JUL	1.410	.650 <T	1.000 <T	.250 <T
AUG	1.400	.880 <T	1.200	1.100
SEP	1.400	.650 <T	.640 <T	.760 <T
OCT	.950 <T	.230 <T	.270 <T	.210 <T
NOV	1.000 <T	.530 <T	.380 <T	.400 <T
DEC	.760 <T	.140 <T	.190 <T	BDL
BARIUM (UG/L)			DET'N LIMIT = 0.020	GUIDELINE = 1000. (A1)
JAN	24.000	22.000	23.000	22.000
FEB	26.000	24.000	22.000	22.000
MAR	29.000	23.000	24.000	22.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	24.000	23.000	23.000	21.000
MAY	23.000	22.000	22.000	22.000
JUN	24.000	23.000	23.000	23.000
JUL	25.160	23.500	23.570	21.000
AUG	25.000	24.000	25.000	24.000
SEP	25.000	25.000	22.000	23.000
OCT	26.000	25.000	25.000	23.000
NOV	24.000	23.000	25.000	22.000
DEC	27.000	24.000	24.000	25.000
BORON (UG/L)				DET'N LIMIT = 0.200 GUIDELINE = 5000. (A1)
JAN	52.000	26.000	38.000	34.000
FEB	74.000	34.000	45.000	33.000
MAR	100.000	94.000	95.000	88.000
APR	92.000	51.000	65.000	69.000
MAY	39.000	49.000	28.000	28.000
JUN	30.000	28.000	28.000	44.000
JUL	52.570	49.700	50.000	38.000
AUG	47.000	50.000	49.000	48.000
SEP	52.000	32.000	32.000	48.000
OCT	36.000	32.000	36.000	27.000
NOV	40.000	42.000	31.000	26.000
DEC	29.000	27.000	25.000	28.000
BERYLLIUM (UG/L)				DET'N LIMIT = 0.010 GUIDELINE = N/A
JAN	.120 <T	BDL	BDL	.030 <T
FEB	.150 <T	BDL	BDL	BDL
MAR	.070 <T	.050 <T	.230 <T	.120 <T
APR	.040 <T	.080 <T	.070 <T	BDL
MAY	BDL	.040 <T	BDL	BDL
JUN	BDL	BDL	BDL	BDL
JUL	.090 <T	BDL	.150 <T	BDL
AUG	.080 <T	.140 <T	.160 <T	.090 <T
SEP	.080 <T	BDL	BDL	.070 <T
OCT	.030 <T	.020 <T	BDL	BDL
NOV	.020 <T	.040 <T	.020 <T	.030 <T
DEC	BDL	BDL	BDL	BDL
CADMIUM (UG/L)				DET'N LIMIT = 0.050 GUIDELINE = 5.000 (A1)
JAN	BDL	BDL	BDL	BDL
FEB	BDL	BDL	.240 <T	BDL
MAR	BDL	.080 <T	BDL	BDL
APR	BDL	.110 <T	.300 <T	BDL
MAY	.080 <T	.100 <T	.100 <T	BDL
JUN	BDL	BDL	.070 <T	.060 <T
JUL	BDL	BDL	.100 <T	BDL
AUG	BDL	.110 <T	BDL	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
SEP	BDL	BDL	BDL	BDL
OCT	BDL	BDL	.130 <T	BDL
NOV	BDL	BDL	.510	BDL
DEC	BDL	BDL	.060 <T	BDL
COBALT (UG/L)			DET'N LIMIT = 0.020	GUIDELINE = N/A
JAN	.160 <T	.110 <T	.110 <T	.120 <T
FEB	.190 <T	.200 <T	.220 <T	.240 <T
MAR	.360 <T	.140 <T	.140 <T	.160 <T
APR	.070 <T	.050 <T	.060 <T	.040 <T
MAY	.390 <T	.440 <T	.350 <T	.370 <T
JUN	.150 <T	.110 <T	.100 <T	.120 <T
JUL	.250 <T	.270 <T	.250 <T	.150 <T
AUG	.110 <T	.060 <T	.150 <T	.120 <T
SEP	.060 <T	.050 <T	.040 <T	.040 <T
OCT	.150 <T	.070 <T	.140 <T	.060 <T
NOV	.090 <T	.050 <T	.140 <T	.070 <T
DEC	.310 <T	.110 <T	.110 <T	.100 <T
CHROMIUM (UG/L)			DET'N LIMIT = 0.100	GUIDELINE = 50. (A1)
JAN	4.800	.840 <T	2.300	1.800
FEB	4.300	1.100	1.900	1.000 <T
MAR	7.800	7.100	6.700	6.300
APR	2.300	.990 <T	1.100	1.500
MAY	4.900	7.600	1.200	1.000 <T
JUN	1.300	.960 <T	.800 <T	4.900
JUL	5.790	5.300	5.330	3.900
AUG	3.900	4.500	4.100	4.300
SEP	6.900	2.100	1.900	5.500
OCT	3.600	2.400	3.400	.630 <T
NOV	2.300	7.000	.660 <T	.500 <T
DEC	86.000	24.000	BDL	BDL
COPPER (UG/L)			DET'N LIMIT = .100	GUIDELINE = 1000 (A3)
JAN	3.500	1.000 <T	61.000	23.000
FEB	3.500	1.400	110.000	4.000
MAR	4.000	1.500	49.000	5.000
APR	3.000	.960 <T	920.000	5.000
MAY	3.700	.930 <T	740.000	6.200
JUN	7.100	1.100	400.000	4.300
JUL	4.960	.920 <T	481.000	3.100
AUG	3.900	.800 <T	26.000	3.000
SEP	5.200	.840 <T	24.000	3.300
OCT	4.600	1.000 <T	52.000	2.800
NOV	13.000	.910 <T	91.000	3.400
DEC	3.200 <T	1.100 <T	540.000	3.500 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
IRON (UG/L)				DET'N LIMIT = 4.000 GUIDELINE = 300. (A3)
JAN	56.000	16.000 <T	21.000 <T	41.000 <T
FEB	31.000 <T	BDL	46.000 <T	41.000 <T
MAR	320.000	BDL	25.000 <T	37.000 <T
APR	13.000 <T	BDL	11.000 <T	22.000 <T
MAY	68.000	BDL	8.700 <T	58.000
JUN	32.000 <T	5.400 <T	13.000 <T	25.000 <T
JUL	35.760 <T	BDL	8.170 <T	BDL
AUG	23.000 <T	BDL	14.000 <T	20.000 <T
SEP	61.000	BDL	24.000 <T	25.000 <T
OCT	96.000	BDL	15.000 <T	BDL
NOV	27.000 <T	BDL	21.000 <T	13.000 <T
DEC	340.000	24.000 <T	55.000 <T	110.000
MERCURY (UG/L)				DET'N LIMIT = 0.010 GUIDELINE = 1.000 (A1)
JAN	.060	.070	.	.030 <T
FEB	.070	.050 <T	.	.040 <T
MAR	.060	.040 <T	.	.030 <T
APR	.050 <T	.070	.	.050 <T
MAY	.060	.070 UCS	.	.030 <T
JUN	.040 <T	.060	.	.030 <T
JUL	.070	.090	.	.050 <T
AUG	.070	.070	.	.040 <T
SEP	.040 <T	.060	.	.050 <T
OCT	.090	.080	.	.050 <T
NOV	.100	.110	.	.050 <T
DEC	.170	.160	.	.070
MANGANESE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 50.0 (A3)
JAN	5.000	.720	2.400	3.300
FEB	3.500	.490 <T	2.300	3.200
MAR	30.000	2.400	6.500	5.200
APR	3.000	.610	2.200	3.200
MAY	5.700	.430 <T	2.300	5.800
JUN	6.400	.810	3.300	5.600
JUL	4.900	.730	2.640	3.300
AUG	3.300	.560	3.500	4.900
SEP	6.600	.580	4.400	5.800
OCT	8.000	.630	4.000	2.000
NOV	3.400	.730	4.900	2.500
DEC	18.000	1.700	4.500	6.600
MOLYBDENUM (UG/L)				DET'N LIMIT = 0.020 GUIDELINE = N/A
JAN	1.100	1.300	1.400	1.100
FEB	1.200	1.300	1.200	1.300
MAR	1.400	1.300	1.300	1.600
APR	1.300	1.300	1.400	1.300

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAY	1.400	1.500	1.600	1.500
JUN	1.500	1.400	1.500	1.500
JUL	1.560	1.690	1.510	1.600
AUG	1.600	1.500	1.700	1.500
SEP	1.200	1.300	1.300	1.300
OCT	1.300	1.300	1.300	1.300
NOV	1.000	1.100	.970	1.100
DEC	1.100	1.300	1.100	1.300
NICKEL (UG/L)				DET'N LIMIT = 0.100 GUIDELINE = 50. (F3)
JAN	1.500 <T	1.200 <T	2.600	1.600 <T
FEB	.850 <T	.560 <T	1.400 <T	.780 <T
MAR	1.300 <T	1.200 <T	1.800 <T	1.800 <T
APR	1.200 <T	.950 <T	1.200 <T	.720 <T
MAY	4.500	4.400	4.700	4.600
JUN	1.700 <T	1.300 <T	1.600 <T	1.000 <T
JUL	2.950	2.710	5.570	.410 <T
AUG	1.100 <T	.720 <T	1.200 <T	.860 <T
SEP	1.500 <T	1.400 <T	1.600 <T	1.300 <T
OCT	.710 <T	.370 <T	23.000	.480 <T
NOV	1.600 <T	2.300	45.000	1.900 <T
DEC	2.100	1.400 <T	2.600	1.600 <T
LEAD (UG/L)				DET'N LIMIT = 0.050 GUIDELINE = 50. (A1)
JAN	.280	.060 <T	3.200	1.200
FEB	.860	.140 <T	10.000	.430
MAR	1.400	.270	1.800	.550
APR	.650	.070 <T	74.000	1.200
MAY	.550	.090 <T	32.000	1.000
JUN	.660	.050 <T	25.000	.920
JUL	.790	.070 <T	31.400	.860
AUG	.480	.060 <T	4.000	.820
SEP	.280	BDL	2.000	.340
OCT	.530	.380	6.400	.420
NOV	.560	.060 <T	19.000	.800
DEC	.560	.090 <T	37.000	.360 <T
ANTIMONY (UG/L)				DET'N LIMIT = .050 GUIDELINE = 146. (D4)
JAN	.530	.550	.540	.630
FEB	.930	.920	.960	.990
MAR	.680	.700	.770	.790
APR	.650	.670	.840	.640
MAY	.890	1.100	1.300	1.200
JUN	.890	.860	.930	.830
JUL	.770	.730	.870	.860
AUG	.570	.500	.850	.980
SEP	.540	.560	.480	.630

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
OCT	.570	.580	.650	.570
NOV	.550	.460	.600	.440
DEC	.400 <T	.450 <T	.720	.800
SELENIUM (UG/L)			DET'N LIMIT = 0.200	GUIDELINE = 10. (A1)
JAN	1.100 <T	1.500 <T	1.300 <T	1.200 <T
FEB	2.000 <T	BDL	5.100 <T	.870 <T
MAR	.330 <T	6.100 <T	4.400 <T	5.400 <T
APR	3.300 <T	5.800 <T	4.500 <T	4.100 <T
MAY	2.100 <T	5.100 <T	5.200 <T	6.300 <T
JUN	1.400 <T	2.800 <T	2.100 <T	4.300 <T
JUL	BDL	2.170 <T	4.660 <T	3.200 <T
AUG	1.900 <T	2.100 <T	1.500 <T	3.000 <T
SEP	BDL	2.100 <T	1.300 <T	2.000 <T
OCT	BDL	BDL	BDL	1.100 <T
NOV	BDL	1.300 <T	1.600 <T	1.300 <T
DEC	BDL	BDL	1.600 <T	1.600 <T
STRONTIUM (UG/L)			DET'N LIMIT = .050	GUIDELINE = N/A
JAN	180.000	170.000	180.000	170.000
FEB	190.000	180.000	170.000	180.000
MAR	190.000	180.000	200.000	190.000
APR	190.000	190.000	200.000	180.000
MAY	200.000	210.000	210.000	210.000
JUN	190.000	190.000	180.000	190.000
JUL	183.000	175.000	182.000	180.000
AUG	180.000	180.000	180.000	180.000
SEP	190.000	190.000	190.000	190.000
OCT	190.000	180.000	180.000	180.000
NOV	180.000	190.000	210.000	180.000
DEC	190.000	190.000	190.000	190.000
TITANIUM (UG/L)			DET'N LIMIT = .050	GUIDELINE = N/A
JAN	4.100	2.600	2.900	2.700
FEB	4.600	4.500	4.200	4.300
MAR	23.000	3.500	4.300	3.500
APR	5.500	5.600	5.500	5.100
MAY	3.300	1.700 <T	1.400 <T	1.700 <T
JUN	3.900	3.400	3.100	3.500
JUL	5.270	3.710	3.790	3.800
AUG	5.000	4.100	4.500	4.000
SEP	4.300	2.600	2.800	3.200
OCT	3.700	2.200	2.300	2.200
NOV	3.700	3.300	3.500	3.800
DEC	7.500	3.100 <T	2.800 <T	2.200 <T
THALLIUM (UG/L)			DET'N LIMIT = .010	GUIDELINE = 13. (D4)

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JAN	BDL	BDL	BDL	BDL
FEB	BDL	BDL	BDL	BDL
MAR	BDL	BDL	BDL	BDL
APR	.030 <T	BDL	.100 <T	.070 <T
MAY	.100 <T	.060 <T	.100 <T	.060 <T
JUN	BDL	BDL	BDL	BDL
JUL	.080 <T	.090 <T	.040 <T	BDL
AUG	BDL	BDL	BDL	BDL
SEP	BDL	BDL	BDL	BDL
OCT	.030 <T	BDL	BDL	BDL
NOV	.030 <T	BDL	BDL	.020 <T
DEC	BDL	BDL	BDL	BDL
URANIUM (UG/L)			DET'N LIMIT = .020	GUIDELINE = 100.(B1)
JAN	.370	.180 <T	.270	.210
FEB	.660	.550	.490	.510
MAR	.580	.270	.420	.320
APR	.480	.440	.250	.460
MAY	.520	.380	.210	.380
JUN	.500	.470	.300	.410
JUL	.730	.380	.250	.380
AUG	.600	.440	.390	.430
SEP	.280	.210	.170 <T	.180 <T
OCT	.330	.260	.220	.200 <T
NOV	.320	.200 <T	.180 <T	.200 <T
DEC	.400 <T	.220 <T	.170 <T	.270 <T
VANADIUM (UG/L)			DET'N LIMIT = .050	GUIDELINE = N/A
JAN	.360 <T	.950	.670	.780
FEB	.280 <T	.510	.610	.460 <T
MAR	.910	.780	.590	.560
APR	.230 <T	.550	.420 <T	.600
MAY	.540	1.100	.920	.960
JUN	.250 <T	.680	.580	.630
JUL	.480 <T	.820	.630	.820
AUG	.430 <T	.860	.760	.730
SEP	.430 <T	.880	.900	.880
OCT	.410 <T	.790	.680	.720
NOV	.380 <T	.920	.850	.790
DEC	.830	.770	.740	.690
ZINC (UG/L)			DET'N LIMIT = .001	GUIDELINE = 5000. (A3)
JAN	2.200	1.800	220.000	23.000
FEB	2.800	1.900	570.000	5.300
MAR	5.300	3.100	28.000	7.900
APR	2.600	1.500	110.000	2.800
MAY	3.000	2.500	160.000	3.200

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JUN	3.200	2.400	170.000	2.900
JUL	2.370	2.100	272.000	2.800
AUG	1.800	1.400	18.000	2.000
SEP	1.800	.620 <T	14.000	1.300
OCT	2.000	2.200	60.000	2.200
NOV	2.600	.990 <T	77.000	1.800
DEC	3.200	1.500 <T	470.000	2.400

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
CHLOROAROMATICS				
HEXACHLOROETHANE (NG/L)			DET'N LIMIT = 1.000	GUIDELINE = 1900 (D4)
JAN	BDL	BDL	.	BDL
FEB	BDL	BDL	.	2.000 <T
MAR	BDL	BDL	.	BDL
APR	BDL	BDL	.	BDL
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	IQU	.	IQU
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT			DISTRIBUTION SYSTEM
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
PESTICIDES & PCB				
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000	GUIDELINE = 700 (G)
JAN	2.000 <T	BDL	.	2.000 <T
FEB	1.000 <T	BDL	.	1.000 <T
MAR	2.000 <T	3.000 <T	.	2.000 <T
APR	1.000 <T	BDL	.	2.000 <T
MAY	2.000 <T	2.000 <T	.	1.000 <T
JUN	BDL	2.000 <T	.	2.000 <T
JUL	BDL	1.000 <T	.	1.000 <T
AUG	2.000 <T	IQU	.	IQU
SEP	BDL	BDL	.	3.000 <T
OCT	BDL	BDL	.	1.000 <T
NOV	1.000 <T	2.000 <T	.	2.000 <T
DEC	2.000 <T	2.000 <T	.	2.000 <T
LINDANE (NG/L)			DET'N LIMIT = 1.000	GUIDELINE = 4000 (A1)
JAN	BDL	BDL	.	BDL
FEB	9.000 <T	BDL	.	3.000 <T
MAR	BDL	2.000 <T	.	1.000 <T
APR	BDL	BDL	.	BDL
MAY	BDL	BDL	.	1.000 <T
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	IQU	.	IQU
SEP	BDL	BDL	.	1.000 <T
OCT	BDL	BDL	.	BDL
NOV	BDL	2.000 <T	.	BDL
DEC	BDL	BDL	.	BDL
ATRAZINE (NG/L)			DET'N LIMIT = 50.00	GUIDELINE = 60000 (B3)
JAN	BDL	BDL	.	BDL
FEB	BDL	BDL	.	BDL
MAR	BDL	BDL	.	BDL
APR	BDL	BDL	.	ILA
MAY	BDL	BDL	.	BDL
JUN	250.000 <T	190.000 <T	.	250.000 <T
JUL	BDL	BDL	.	BDL
AUG	BDL	BDL	.	.
SEP	BDL	BDL	.	.
OCT	BDL	BDL	.	.
NOV	120.000 <T	140.000 <T	.	.
DEC	BDL	BDL	.	.
D-ETHYL ATRAZINE (NG/L)			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	BDL	BDL	.	BDL
FEB	BDL	BDL	.	BDL
MAR	BDL	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	BDL	BDL	.	ILA
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	BDL	.	.
SEP	BDL	BDL	.	.
OCT	BDL	BDL	.	.
NOV	240.000 <T	220.000 <T	.	.
DEC	BDL	BDL	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
PHENOLICS (UG/L PHENOLICS)			DET'N LIMIT = 0.2	GUIDELINE = 2.00 (A3)
JAN	1.200	1.600	.	.
FEB	1.600	.600	.	.
MAR	2.600	2.600	.	.
APR	1.200	1.200	.	.
MAY	2.400	3.200	.	.
JUN	IIS	1.000 <T	.	.
JUL	1.200	1.200	.	.
AUG	.800 <T	1.000 <T	.	.
SEP	1.600	3.200	.	.
OCT	1.200	1.600	.	.
NOV	BDL	.600 <T	.	.
DEC	.600 <T	.400 <T	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
VOLATILES				
BENZENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 5.0 (B1)
JAN	BDL	BDL	.	BDL
FEB	BDL	BDL	.	BDL
MAR	BDL	BDL	.	.050 <T
APR	BDL	.100 <T	.	.050 <T
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	IU	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
TOLUENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 24.0 (B4)
JAN	BDL	.100 <T	.	.050 <T
FEB	BDL	BDL	.	.050 <T
MAR	BDL	.050 <T	.	.200 <T
APR	BDL	.350 <T	.	.200 <T
MAY	BDL	.100 <T	.	.050 <T
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	.050 <T
AUG	BDL	IU	.	.050 <T
SEP	.100 <T	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	.100 <T	.	.100 <T
ETHYLBENZENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 2.4 (B4)
JAN	BDL	.100 <T	.	BDL
FEB	BDL	BDL	.	.050 <T
MAR	.050 <T	.050 <T	.	.050 <T
APR	.050 <T	.150 <T	.	.100 <T
MAY	BDL	.100 <T	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	IU	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
M-XYLENE (UG/L)				DET'N LIMIT = .100 GUIDELINE = 300 (B4)
JAN	BDL	.100 <T	.	BDL
FEB	BDL	BDL	.	BDL
MAR	BDL	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
O-XYLENE (UG/L)			DET'N LIMIT = .050	GUIDELINE = 300 (B4)
APR	.100 <T	.300 <T	.	.200 <T
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	IU	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
O-XYLENE (UG/L)			DET'N LIMIT = .050	GUIDELINE = 300 (B4)
JAN	BDL	.050 <T	.	BDL
FEB	BDL	BDL	.	.050 <T
MAR	.050 <T	BDL	.	.050 <T
APR	.100 <T	.150 <T	.	.100 <T
MAY	BDL	.050 <T	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	IU	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
STYRENE (UG/L)			DET'N LIMIT = .050	GUIDELINE = 46.5 (D2)
JAN	BDL	.050 <T	.	BDL
FEB	.250 <T	.050 <T	.	.250 <T
MAR	.150 <T	.150 <T	.	.250 <T
APR	.150 <T	.300 <T	.	.250 <T
MAY	BDL	.350 <T	.	.050 <T
JUN	BDL	.100 <T	.	.050 <T
JUL	.100 <T	.100 <T	.	.100 <T
AUG	BDL	IU	.	.100 <T
SEP	BDL	BDL	.	.100 <T
OCT	BDL	BDL	.	BDL
NOV	BDL	.050 <T	.	BDL
DEC	BDL	BDL	.	.050 <T
CHLOROFORM (UG/L)			DET'N LIMIT = .100	GUIDELINE = 350 (A1+)
JAN	BDL	8.800	.	8.500
FEB	BDL	8.800	.	5.300
MAR	BDL	12.200	.	13.000
APR	BDL	13.200	.	11.200
MAY	BDL	20.000	.	14.900
JUN	BDL	13.800	.	10.600
JUL	BDL	13.400	.	12.500
AUG	.100 <T	IU	.	13.700

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
SEP	.200 <T	14.800	.	12.600
OCT	.200 <T	11.500	.	8.900
NOV	BDL	9.300	.	8.300
DEC	BDL	9.400	.	4.200
111, TRICHLOROETHANE (UG/L)				DET'N LIMIT = .020 GUIDELINE = 200 (D1)
JAN	BDL	BDL	.	BDL
FEB	BDL	BDL	.	BDL
MAR	BDL	BDL	.	BDL
APR	BDL	.020 <T	.	BDL
MAY	.020 <T	.020 <T	.	.040 <T
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	.020 <T	IU	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
DICHLOROBROMOMETHANE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 350 (A1+)
JAN	BDL	10.200	.	9.550
FEB	BDL	11.900	.	7.500
MAR	BDL	9.750	.	9.050
APR	BDL	14.350	.	11.150
MAY	BDL	15.800	.	12.700
JUN	BDL	12.150	.	9.950
JUL	BDL	12.100	.	10.200
AUG	BDL	IU	.	10.400
SEP	BDL	13.000	.	10.450
OCT	.150 <T	11.500	.	8.550
NOV	BDL	9.650	.	7.750
DEC	BDL	9.950	.	5.900
CHLORODIBROMOMETHANE (UG/L)				DET'N LIMIT = .100 GUIDELINE = 350 (A1+)
JAN	BDL	7.600	.	6.700
FEB	BDL	9.500	.	7.000
MAR	BDL	5.000	.	3.800
APR	BDL	11.700	.	8.200
MAY	BDL	10.000	.	8.200
JUN	BDL	8.600	.	7.300
JUL	BDL	7.800	.	5.600
AUG	BDL	IU	.	6.300
SEP	BDL	7.600	.	6.600
OCT	BDL	9.100	.	6.400
NOV	BDL	6.500	.	4.900
DEC	BDL	7.700	.	5.200

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
BROMOFORM (UG/L)			DET'N LIMIT = .200	GUIDELINE = 350 (A1+)
JAN	BDL	1.000 <T	.	.800 <T
FEB	BDL	1.600 <T	.	1.200 <T
MAR	BDL	.600 <T	.	.400 <T
APR	BDL	1.800 <T	.	1.200 <T
MAY	BDL	.800 <T	.	.800 <T
JUN	BDL	1.000 <T	.	.800 <T
JUL	BDL	.800 <T	.	.600 <T
AUG	BDL	IU	.	.800 <T
SEP	BDL	1.000 <T	.	1.000 <T
OCT	BDL	1.400 <T	.	1.000 <T
NOV	BDL	.800 <T	.	.600 <T
DEC	BDL	1.200 <T	.	1.000 <T
TOTL TRIHALOMETHANES (UG/L)			DET'N LIMIT = .500	GUIDELINE = 350 (A1)
JAN	BDL	27.600	.	25.550
FEB	BDL	31.800	.	21.000
MAR	BDL	27.550	.	26.250
APR	BDL	41.050	.	31.750
MAY	BDL	46.600	.	36.600
JUN	BDL	35.550	.	28.650
JUL	BDL	34.100	.	28.900
AUG	BDL	IU	.	31.200
SEP	BDL	36.400	.	30.650
OCT	BDL	33.500	.	24.850
NOV	BDL	26.250	.	21.550
DEC	BDL	28.300	.	16.250

TRACE LEVELS OF TOLUENE ARE LABORATORY ARTIFACTS DERIVED FROM THE ANALYTICAL METHODOLOGY.

TRACE LEVELS OF STYRENE ARE CONSIDERED TO BE LABORATORY ARTIFACTS RESULTING FROM THE LABORATORY SHIPPING CONTAINERS.

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
FECAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	0 (A1)
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	2000. (B4)
PENTACHLOROPHENOL	NG/L	50.	30000. (B4)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	^{o}C	N/A	<15 ^{o}C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
SULPHATE	MG/L	.200	500. (A3)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	10. (F3)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	900000. (B1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR EPOXIDE	NG/L	1.0	3000.	(A1)
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	200000.	(B4)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	120000.	(B1)
PICLORAM	NG/L	100.	190000.	(B3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	20000.	(B1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION(AZINPHOSMETHYL)	NG/L	N/A	20000.	(B1)
MALATHION	NG/L	20.	190000.	(B1)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(A1)
METHYLTRITHION	NG/L	20.	N/A	

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
PARATHION	NG/L	20.	50000. (B1)
PHORATE (THIMET)	NG/L	20.	2000. (B3)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENONYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	90000. (B1)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	90000. (B1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	.05 G)
METHYLENE CHLORIDE	UG/L	.500	50. (B1)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	70. (D5)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (B1)
1,2-DICHLOROPROPANE	UG/L	.050	6.0 (D5)
TRICHLOROETHYLENE	UG/L	.100	50. (B1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	60. (D5)
1,4-DICHLOROBENZENE	UG/L	.100	1.0 (B4)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	3.0 (B4)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	140. (D5)